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Jea-Sam Lee

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EXAMINER

KEMMERLE III, RUSSELL J

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



### **DETAILED ACTION**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 112***

Claims 1-5 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 as currently amended recites the voids of the mold are “formed at outside of the gypsum mold”, it is unclear what is meant by this term.

Claims 2-5 and 7 are rejected based on their dependence from claim 1.

#### ***Claim Rejections - 35 USC § 103***

Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackburn ‘109 (US Patent 2,584,109) in view of Blackburn ‘110 (US Patent 2,584,110), Faessle (US Patent 4,541,471) and Nemeskeri (US Patent 6,918,753).

The Blackburn references both disclose a method of press molding a clay object as well as a pressing machine and a method of making a mold for such an apparatus. The mold disclosed as preferably a gypsum mold in a housing with air tubes running through the mold to allow pressurized air to assist in removing the shaped clay from the mold. The housings contain an air supply hole connected to an air supply means to introduce the pressurized air in to the mold.

The gypsum mold of the Blackburn references has voids inside for removing moisture and supplying air to inside the mold. The limitation of current claim 1 of how

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and when the voids are formed is not given any weight since claim 1 is directed to an apparatus, and therefore all that is required is that the voids are present in the mold, how the voids are formed is not relevant.

Faessle discloses a gypsum mold used for shaping materials that includes a wire net running through the gypsum mold across the entire depth of the mold with a porous hose for supplying air connected to the wire net (Col 4 lines 38-39, Fig).

Nemeskeri discloses a pressing machine that includes a frame having an upper mold housing which moves up and down and a lower mold housing that moves back and forth (horizontally) in order to allow for easier removal of the molded piece (see Figs. 8-15).

It would have been obvious to one of ordinary skill in the art, at the time of invention by applicant, to have used the gypsum molds of the Blackburn references in a machine as taught by Nemeskeri and having a wire net running through the mold as taught by Faessle. This would have been obvious because Nemeskeri discloses that the horizontal movement allows for easier removal of the pressed product and the wire net of Faessle would strengthen the gypsum mold. It would be further obvious that some form of control means would be required to control the pressing time and pressure, as well as the air supply.

The prior art does disclose a control means which could be configured in any way desired. Since claim 1 recites an apparatus, all that is required to meet the limitations is that the same structure be present in or rendered obvious by the prior art. When the control means is configured to start supplying air would be how the apparatus

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is used, and is therefore not given any weight in the apparatus of claim 1. Additionally, claim 1 as currently amended to recite that the control means are configured to start the air supply at a moment of ejecting air into the mold. The moment the air supply is started into the mold would have to be the moment the control means is configured to start the air.

Referring to claim 2, while the prior art does not specifically disclose that the drive means are hydraulic, the use of hydraulics to control the movement of a press is extremely well known in the art and would have been obvious to one of ordinary skill at the time of invention by applicant.

Referring to claim 3, Blackburn '109 discloses that a hunk of clay is placed in the mold and pressed, this would require that the clay be cut to a suitable size prior to being placed in the mold in order to ensure that the proper amount of clay is used (Claim 1). One of ordinary skill in the art would understand that prior to molding the clay should be kneaded in order to remove air so that air bubbles are minimized in the final piece, and that after molding the piece would be dried and fired as is traditionally done with ceramic articles. Blackburn '109 discloses that the air pressure is impressed against the pressed clay prior to the release of the molding pressure, which would result in some amount of continuous air supply occurring during some portion of the pressing and casting step (Col 6 lines 5-9). This application of air pressure through the mold would result in some degree of an air film between the mold and the clay. Further, engraving and glazing of a ceramic article prior to firing is notoriously well known as methods of providing a decorative surface on ceramic articles, and would have been

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obvious to one of ordinary skill in the art as a means of providing a ceramic article with the desired final appearance.

Referring to claim 4, Faessle discloses a method of making a gypsum mold by providing a molding housing which has air supply lines running through it into which a prototype piece is placed, followed by filling the housing with gypsum which is allowed to dry around the prototype to form the mold surfaces. During the drying process compressed gas is flowed through the gypsum to assist in water removal (Col 2 lines 3-24). Since air is flowed through the mold over the entire drying process this would include supplying air to the mold when over 50% of the sludge is solidified.

Referring to claim 5, since the Blackburn references are silent as to the temperature of the clay prior to the pressing it is assumed to be at room temperature. Further Blackburn '109 discloses that the clay to be pressed may be wet or damp, which one of ordinary skill in the art would understand would encompass a moisture content of 15-20 wt% (Col 5 lines 73-74).

Referring to claim 7, while the cited references do not specifically disclose the amount of time the clay is pressed, one of ordinary skill in the art would understand that the pressing would only have to be done for a period of time sufficient to form the clay into the desired shape, and to optimize this time to 1-2 seconds.

### ***Response to Arguments***

Applicant's arguments filed 8 April 2010 have been fully considered but they are not persuasive.

Applicants appear to first argue that the present invention produces lots of voids in a gypsum mold while gypsum sludge is solidified by supplying air to the supporting wire net. Applicants appear to argue that this method of forming the mold is different than that of Blackburn '109 and '110.

This is not found to be persuasive since a method of forming the mold is not included in any of the current claims. What is claimed is a molding apparatus and a method of using it. The limitations recited do not depend on the way the mold was formed but instead on the physical properties of the mold and its use. These limitations have each been addressed as taught above.

Applicants appear to next argue that the reason for performing certain steps in the current invention is different than the reasons for performing the steps in Blackburn '109.

This is not found to be persuasive because the goal of the step is not given any weight. If the steps as recited are taught (or the structure in the case of the apparatus claims) it is irrelevant if they are performed for different reasons.

It is noted that Applicant's arguments are, in some instances, very difficult to understand and ascertain what is being argued. While the Examiner has attempted to understand what is meant by as much as possible of the remarks it was not always possible. It appears that the bulk of the arguments are directed to a different purpose or intended result of the structure or steps which is not given patentable weight as discussed above. It further appears that Applicants argue that the prior art fails to teach certain limitations of the current claims, however specific arguments could not be

discerned sufficiently to be more precisely addressed beyond pointing out that the claim limitations are addressed above in the rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **RUSSELL J. KEMMERLE III** whose telephone number is (571)272-6509. The examiner can normally be reached on Monday through Thursday, 7:00-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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